

is available. And we may assume that they at least possess a symbolic value, and can tell us something, by their occurrence or non-occurrence, their similarities and differences, and the order in which they come to our observation.

The enormous power of Life's energy is not generally realized. An animal or plant, if likened to a machine, must be likened to a machine of marvellous efficiency. Its strength must not be computed by the force which is developed by its external muscles : in the assimilation of its food, and in the secretion of waste, it forms chemical compounds which, if capable at all of being formed in a laboratory, can only be produced by the lavish expenditure of energy. A class of minute bacteria, living in the soil, are able to fix nitrogen from the air. For this same purpose factories have been established, but the energy required for the process is so large, and, if obtained by burning fuel, would be so expensive, that they can only be maintained with hope of profit where their machinery can be driven by large waterfalls. It has been computed that an acre of wheat, in coming from germination to maturity, daily exerts the force of more than fifteen horses. The coal beds by which modern industry subsists are a store of energy that was accumulated by plant life in ages gone by : in fixing it the plants exerted as much power as we now obtain from the

coal by burning it. Coal is popularly described as "stored sunlight," and it is true that the plants needed light in order to produce it. But so does a steam engine need water for its function- ing. Yet we do not credit the water with the power that is developed. Moreover, not only is Life's force remark-